

Docket No. 51066

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT: Cameron et al.

EXPRESS MAIL LABEL NO.: ET755553436US

FILED: HEREWITH

FOR: NOVEL POLYMERS AND PHOTORESIST COMPOSITIONS

THE HONORABLE COMMISSIONER OF PATENTS AND TRADEMARKS  
WASHINGTON, DC 20231

SIR:

**PRELIMINARY AMENDMENT**

Applicants file the above-identified application herewith. Please amend the application as follows.

**IN THE SPECIFICATION**

At page 1, line 1 of text, please add the following sentence:

--The present application claims the benefit of U.s. provisional application number 60/271,403, filed February 25, 2001, which is incorporated herein by reference in its entirety.--

**IN THE CLAIMS**

Please cancel without prejudice claims 14-26, 28 and 34.

Please amend the following claims.

3. (amended) The method of claim 1 wherein the sensitizer is an aromatic compound.

4. (amended) The method of claim 1 wherein the sensitizer is a carbocyclic aryl compound.

5. (amended) The method of claim 1 wherein the sensitizer is a heteroaromatic compound.

6. (amended) The method of claim 1 wherein the sensitizer has from 1 to 3 separate or fused rings.

7. (amended) The method of claim 1 wherein the photoacid generator compound is an onium compound or a non-ionic compound.

8. (amended) The method of claim 1 wherein the photoacid generator compound is an iodonium or sulfonium photoacid generator compound which has one or more cation substituents selected from the group consisting of optionally substituted naphthyl, optionally substituted thienyl and pentafluorophenyl.

10. (amended) The method of claim 1 wherein the photoacid generator compound is a non-ionic oxime sulfonate compound or a non-ionic N-oxyimidosulfonate compound.

11. (amended) The method of claim 1 wherein the photoacid generator is a compound of any one of Formula I through XIV, XIVA, XV, XVIa, XVIb, XVIb', XVIc, XVIc', XVIca, XVIcb, and XVIcc.

12. (amended) The method of claim 1 wherein the photoresist coating layer is exposed to radiation having a wavelength of about 193 nm.

13. A photoresist composition comprising a resin and a photoacid generator system, the system comprising a sensitizer compound and a photoacid generator compound that is  
1) an iodonium or sulfonium photoacid generator compound which has one or more cation

substituents selected from the group consisting of optionally substituted naphthyl, optionally substituted thienyl and pentafluorophenyl, or 2) a non-ionic oxime sulfonate compound or a non-ionic N-oxyimidosulfonate compound.

27. (amended) A method for forming a photoresist relief image on a substrate comprising:

- (a) applying a coating layer of a photoresist composition of claim 13 on a substrate; and
- (b) exposing the photoresist coating layer to patterned activating radiation and developing the exposed photoresist layer to provide a relief image.

31. (amended) An article of manufacture having on at least one surface a coating layer of the photoresist composition of claim 13.

32. (amended) An article of manufacture comprising a microelectronic wafer or flat panel display substrate that has on at least one surface a coating layer of a photoresist of claim 13.

#### **REMARKS**

The specification has been amended to include the priority claim. For the sole purpose of reducing initial filing fees, claims 14-26, 28 and 34 have been cancelled without prejudice, and claims 3, 4-8, 10-13, 27, 31 and 32 have been amended to eliminate multiple dependencies and correct typographical matters.

Early consideration and allowance of the application are solicited.

Respectfully submitted,



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**VERSION WITH CHANGES MARKED**

3. (amended) The method of claim 1 [or 2] wherein the sensitizer is an aromatic compound.

4. (amended) The method of claim 1 [any one of claims 1 through 3] wherein the sensitizer is a carbocyclic aryl compound.

5. (amended) The method of claim 1 [any one of claims 1 through 4] wherein the sensitizer is a heteroaromatic compound.

6. (amended) The method of claim 1 [any one of claims 1 through 5] wherein the sensitizer has from 1 to 3 separate or fused rings.

7. (amended) The method of claim 1 [any one of claims 1 through 6] wherein the photoacid generator compound is an onium compound or a non-ionic compound.

8. (amended) The method of claim 1 [any one of claims 1 through 7] wherein the photoacid generator compound is an iodonium or sulfonium photoacid generator compound which has one or more cation substituents selected from the group consisting of optionally substituted naphthyl, optionally substituted thiényl and pentafluorophenyl.

10. (amended) The method of claim 1 [any one of claims 1 through 9] wherein the photoacid generator compound is a non-ionic oxime sulfonate compound or a non-ionic N-oxyimidatosulfonate compound.

11. (amended) The method of claim 1 [any one of claims 1 through 10] wherein the photoacid generator is a compound of any one of Formula I through XIV, XIVA, XV, XVIA, XVIB, XVIB', XVIC, XVIC', XVICa, XVICb, and XVICc.

12. (amended) The method of claim 1 [any one of claims 1 through 11] wherein the photoresist coating layer is exposed to radiation having a wavelength of about 193 nm.

13. A photoresist composition comprising a resin and [and] a photoacid generator system,

the system comprising a sensitizer compound and a photoacid generator compound [compoiund] that is 1) an iodonium or sulfonium photoacid generator compound which has one or more cation substituents selected from the group consisting of optionally substituted naphthyl, optionally substituted thiaryl and pentafluorophenyl, or 2) a non-ionic oxime sulfonate compound or a non-ionic N-oxyimidatosulfonate compound.

27. (amended) A method for forming a photoresist relief image on a substrate comprising:

- (a) applying a coating layer of a photoresist composition of claim 13 [any one of claims 13 through 26] on a substrate; and
- (b) exposing the photoresist coating layer to patterned activating radiation and developing the exposed photoresist layer to provide a relief image.

31. (amended) An article of manufacture having on at least one surface a coating layer of the photoresist composition of claim 13 [any one of claims 13 through 26].

32. (amended) An article of manufacture comprising a microelectronic wafer or flat panel display substrate that has on at least one surface a coating layer of a photoresist of claim 13 [any one of claims 13 through 26].